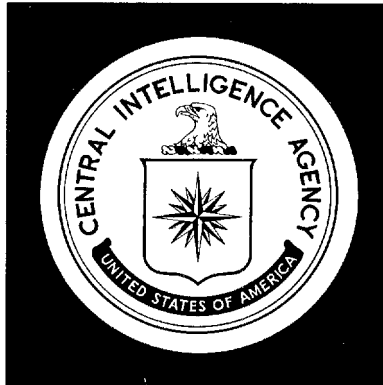


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Intelligence Memorandum

*The Effect on the North Vietnamese Economy
of a Reduction of Imports to 2,700 Tons Per Day*

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CENTRAL INTELLIGENCE AGENCY
6 July 1972

INTELLIGENCE MEMORANDUM

THE EFFECT ON THE NORTH VIETNAMESE ECONOMY
OF A REDUCTION OF IMPORTS
TO 2,700 TONS PER DAY

1. In an earlier study,⁽¹⁾ we stated that North Vietnam's minimum import requirements over the next year to meet its basic economic needs and to continue the war at near present levels would be 1 million tons (about 2,700 tons per day). This memorandum discusses in detail the degree to which Hanoi's economy and its war effort would be affected if imports did in fact drop to this level.

Concept of "Minimum Imports"

2. We define the term "minimum imports" as that annual rate of imports which would provide Hanoi the supplies necessary to continue its main force war in Indochina with periodic high levels of activity, and at the same time maintain domestic order in North Vietnam. On the military side, we have calculated that less than one-fifth of the import total would have to be arms, ammunition, and petroleum for military uses. On the economic side, we have assumed that Hanoi will make sharp cutbacks in imports supporting certain industries which appear to be of marginal importance to the war effort. In addition, we have assumed that food and fertilizer imports would cease, since -- with belt-tightening -- North Vietnam should have enough domestically produced food to meet minimum dietary needs at least until early 1973.

3. The concept of "minimum imports" is necessarily rough hewn. We know little about the level of stockpiles currently existing in most sectors of the North Vietnamese economy. Where they exist, stockpiles would extend the time before which the effects of reduced imports would begin to be felt. At the same time, we have made no allowance in our calculations for the destruction of supplies by bombing, and such destruction would obviously bring closer the day when import shortages begin to affect the economy.

4. There are also other reasons why our estimates in the paragraphs below are subject to fairly wide margins of error. As the real world situation evolves, it is quite likely that certain categories of imports could be squeezed to even lower levels than our analysis assumes, in favor of more critical items in short supply. In other words, the imposition of truly extreme austerity measures by the regime could mean even lower import requirements. It is always risky to predict what a relatively underdeveloped country may or may not find to be essential under crisis conditions. Thus, a lower "minimum" might be acceptable to the regime if the immediate losses were seen as likely to be short-lived or if a judgment were made to sacrifice the country's economic needs in favor of immediate military goals to a greater degree than we now think is likely. Indeed, by drawing heavily on stockpiles, the regime might be able to forgo imports altogether for a short period of time. Conversely, Hanoi's leaders may be less sanguine than we about the resiliency of the North Vietnamese population and the extent to which the Party can impose further belt-tightening and burdens without running the risk of politically serious adverse reactions among the population.

Main Characteristics of the North Vietnamese Economy

5. Except for its manpower and the agricultural production which helps feed that manpower, North Vietnam's domestic economy makes only a minimum contribution to the support of military operations. North Vietnamese industry has a very small capability to produce military equipment. All heavy military hardware, as well as most of the small arms, ammunition, and medical supplies, must be imported from Communist countries. Similarly, all petroleum products, practically all transport equipment, and most of the industrial machinery, metal products, and spare parts must be imported.

6. North Vietnam's economy is essentially agrarian. Its industries are generally simple and small-scale. This can be seen in the following tabulation, which shows the relative contributions of various sectors to national output.

<u>Economic Sector</u>	<u>Percent of National Output</u>
Agriculture	<u>50</u>
Industry	<u>25</u>
Central (modern)	10
Local and handicrafts	15
Construction	<u>5</u>
Commerce, transportation, and communications	<u>20</u>
<i>Total</i>	<i>100</i>

Some 65% of total economic activity is encompassed by agriculture, local industry (for example, food processing and small machine shops), and handicrafts. Each major area of the economy requires relatively simple technologies and large applications of manpower. Agriculture employs almost 7 million people (70% of the total labor force), local industry about 165,000, and handicrafts 600,000.

7. At its present stage of development, North Vietnam's economy requires comparatively few sophisticated inputs from domestic industry or abroad to sustain production levels. Agriculture's fortunes depend primarily on weather conditions. Most fertilizer requirements are met by human and animal wastes. Small amounts of chemical fertilizers are supplied by modern industry and the remainder by imports. Electric power for irrigation and drainage pumping is furnished partly by local generating facilities and partly by the main power networks. Local industry produces farming hand tools and simple machinery, and provides most of agriculture's needed machine repairs. Handicraft enterprises supply some three-fourths of the country's consumer goods, using largely raw materials from agriculture. Modern industry's contribution covers basic commodities, such as textiles, cement, coal, pig iron, machine tools, electric power, and a few chemical products. Despite heavy investment in the modern components of industry, the pre-1968 bombing has hampered its growth, and the sector still accounts for only about 10% of GNP.

8. This type of economy has substantial resiliency and capacity to resist economic collapse. With relatively few exceptions, the economic institutions and the productive processes are not elaborately organized and are therefore relatively insensitive to specific losses. Substitution between domestic and imported producers' goods is relatively greater than would be the case in a more highly developed economy. For example, the relatively primitive technology of small-scale industry permits a high degree of simple parts replacement and equipment repairs from materials and tools available locally. In short, in this sort of economy, war losses tend to be diffused or distributed fairly evenly, with rather limited impact on any particular group. Moreover, the conscious avoidance by the United States of destruction of facilities in agriculture -- far and away the largest sector -- limits the degree to which Hanoi's economy is really being tested.

Import Totals and Composition

9. During 1971, total North Vietnamese imports amounted to about 2.5 million tons, or an average of about 6,800 tons per day. Principal components of this total [redacted] included foodstuffs, petroleum, and machinery and equipment [redacted]

Stripping the 1971 pattern of imports of all goods likely to be judged unessential by the North Vietnamese yields a required average daily tonnage of about 2,700 for the next 12-month period [redacted] although these requirements clearly vary with the length of time North Vietnam is under interdiction and estimates by the North Vietnamese of how much longer they must hold out. The following paragraphs explain the basis of the particular commodity requirements from which the estimated total tonnage is derived.

Food

10. Although foodstuffs accounted for the largest share of North Vietnamese import tonnages in 1971, this category provides the greatest flexibility for belt-tightening in pursuit of war aims. In spite of curtailed foods imports, North Vietnam can probably manage on domestic food supplies at least until the next harvest in October/November of this year. Hanoi's internal economic position after the end of this year will be significantly influenced by the yield from the upcoming autumn harvest -- if it is large Hanoi's problems are eased; if small, they will be materially intensified. The recent May-June harvest was probably some 10% to 20%

Table 1

North Vietnam's Minimum Import Requirements
Mid-May 1972 to Mid-May 1973

	Metric Tons ^{a/}
Petroleum	<u>350,000</u>
Military and military support	120,000
Civilian needs	230,000
Economic goods	<u>175,000</u>
Metals and metal products	70,000
Machinery and equipment	15,000
Transportation equipment	14,000
Other	77,000
Military goods	<u>65,000</u>
Ammunition, weapons, and military equipment for use in North Vietnam	38,000
Ammunition, weapons, and military equipment for use in Laos, Cambodia, and South Vietnam	27,000
Unidentified imports	<u>425,000</u>
<i>Total</i>	<i>1,000,000</i>

(Equivalent to about 2,700 tons per day)

a. Because of rounding, components may not add to the totals shown.

below the record 1971 crop.⁽²⁾ Supplemented by secondary crops, this harvest will probably supply about four months of staple foods, with no reduction in per capita consumption (see Table 2). Countrywide shortages should thus not occur until several weeks prior to the next harvest. A

North Vietnamese Staple Food Consumption
June 1972 to November 1972

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	Consumption Alternatives (Kilograms per Month per Person)	Consumption Total for Five Months (Thousand Tons)	Imports Required to Sustain Consumption (Thousand Tons)	Months of Food Supply with No Imports
Situation I	13.5	1,360	200	4-4½
Assumes a 10% reduction in the current fifth-month rice harvest and spring secondary crop harvest from last year's production estimates for the same crops because of residual damage from the floods of 1971. Milled rice pro- duction available for food estimated at about 960,000 tons; secondary food crops available until November estimated at about 200,000 tons in milled rice equivalents.	12	1,210	50	4½-5
	11	1,110	-50	5-5½
	10	1,010	-150	5½-6
	9	910	-250	6-6½
Situation II	13.5	1,360	330	3½-4
Same as above, but with 20% reduction from last year's production estimates.	12	1,210	180	4-4½
Milled rice estimated at about 860,000 tons; secondary food crops available until November estimated at about 170,000 tons in milled rice equivalents.	11	1,110	80	4½-5
	10	1,010	-20	5-5½
	9	910	-120	5½-6

reduction in per capita consumption of staple foods from the current 13 to 14 kilograms a month ration to 11 kilograms a month would stretch the domestic food supply all the way to the October harvest and beyond if per capita consumption were forced as low as 9 kilograms per month (as was done in 1961 during a period of severe food shortages).

11. Since imports serve largely to supply urban food needs, while the rural populace is fed through the production by agricultural cooperatives, a nationwide reduction in food consumption could be effected by reducing the monthly ration which the urbanite is permitted to purchase through state stores and increasing the percentage of rural cooperative food supplies which must be sold to the state, with the increment going to urban markets. Alternatively, the state could purchase all cooperative production and then recall a reduced amount to the cooperative.

12. Hanoi has not yet taken such drastic steps. It has, however, moved to induce farmers to provide a higher proportion of their rice to the government-controlled distribution channels. Patriotic appeals have been addressed to farmers' cooperatives, urging that any surplus -- in addition to the cooperatives' normal production obligation -- be sold to the state. While the government has stressed the voluntary nature of this program, the new policy probably amounts to at least a temporary suspension of a 1970 decree that gave peasants more leeway in disposing of surpluses through increased personal consumption or sale on the free market. Continuous warnings have also been issued against excessive consumption, profiteering, or abuses of the rationing system.

13. Staple foods are the largest but by no means the sole components of the North Vietnamese diet. Additional caloric needs above the 1,600 per day supplied by the average 13 to 14 kilograms per month of staple foods are provided by small quantities of fruits, vegetables, meats, and fish. The mine barrier will not restrict fresh-water fishing, which composes some 40% of the total annual fish catch. Marine fishing will suffer to the degree that boats are unable to reach fishing waters. The total marine and fresh-water catch could be reduced by something like 25%. However, as total fish consumption constitutes less than 10% of the North Vietnamese diet, this reduction would not drop total food supplies by more than 3%. As required, the populace could slightly adjust its consumption of these supplemental foods and perhaps utilize marginal foods not normally consumed.

Fertilizer

14. No additional fertilizer imports will be necessary this year to ensure adequate food supplies in North Vietnam throughout 1972. The 1972

May/June rice harvest and secondary crop production will fill minimum consumption needs until the October/November rice crop is completed. With domestic production and current stocks of fertilizer (or even with virtually no fertilizer application), this October/November harvest almost certainly will be great enough to supply the North Vietnamese into the first months of 1973.

Petroleum

15. North Vietnam is wholly dependent upon outside sources of supply for petroleum, which is among the most critical commodities in its current military strategy. Imports of petroleum products for the past four years have averaged close to 400,000 tons annually. The estimated composition of imports during 1971 is as follows:

	<u>Tons</u>
Kerosene	33,000
Special products	20,000
Diesel fuel	216,000
Gasoline	136,000
<i>Total</i> ⁽³⁾	405,000

Military uses probably account for some 120,000 tons annually (almost 330 tons daily).⁽⁴⁾ Imports of petroleum at the 1971 level, therefore, should permit civilian consumption on the order of 280,000 tons (about 770 tons per day).

16. Non-military uses of petroleum are diverse. Most kerosene is devoted to household uses. In agriculture the most important category of consumption is fuel for irrigation and drainage pumps, although a small amount is used for the limited amount of farm machinery. Industry basically depends on coal and electric power for energy. Industrial consumption of petroleum products is limited largely to heavy lubricants for machinery bearings or gear boxes and to recoverable oils used in machine tool operations and other uses in small-scale industry. Electric power production also consumes substantial quantities of petroleum. Electricity produced by diesel-driven generators currently is estimated to be roughly one-half the level of 1967, when diesels probably consumed 30,000 to 40,000 tons of fuel because of the heavy damage to coal-burning powerplants. Construction

3. Includes 15,000 tons estimated to have been shipped overland.

4. See section on military goods, below.

is estimated to be one of the largest consumers of petroleum products in normal times, using fairly large quantities for construction cranes, water pumps, bulldozers, welding equipment, air compressors, mobile generators, and transportation of construction materials. Major civilian requirements for petroleum are broken out in the following tabulation:

	<u>Tons</u>
Household	30,000
Industry	10,000
Agriculture	10,000
Electric power	20,000
Construction	40,000
Transportation	170,000
<i>Total</i>	<i>280,000</i>

17. While there appears to be little room for curtailing civilian consumption of petroleum without also diminishing levels of economic activity, Hanoi, under a regime of austerity, may be willing (or forced) to accept such curtailments. Household consumption might be cut back by perhaps one-half, but not eliminated entirely. Manufacturing operations involving certain construction materials or production of consumer goods, such as textiles, also may be cut back. Construction of developmental projects could be halted, and some civilian transportation activities could be curtailed. On the other hand, bomb damage to hydroelectric and coal-burning central plants will once again require greater reliance on small diesel-driven generators, thereby tending to increase the requirement for diesel fuel. In agriculture, the current harvest and cultivation for the autumn crop, along with the coming wet season (when pumps will be more heavily used), will tend to keep consumption of fuels at a seasonal high.

18. On balance, it is unlikely that North Vietnam could reduce petroleum consumption very much without serious economic dislocation. If Hanoi were to impose maximum stringency on its civilian petroleum consumers, consumption might be reduced by about 50,000 tons on an annual basis. Such a cutback would largely impinge on household, industrial, and civilian transportation uses.

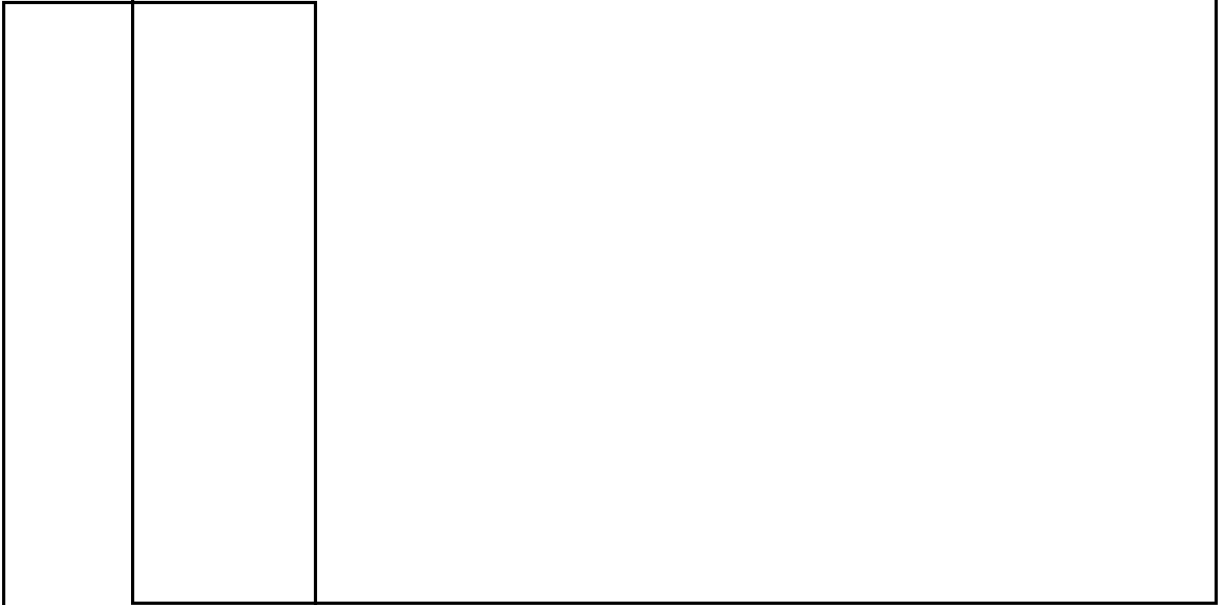
Other Economic Goods

19. North Vietnam undoubtedly can reduce imports of a wide range of items normally used in the economy but, in so doing, will have to forgo

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economic development and must expect a decline in the efficiency of production operations. Lower imports of metal products and machinery would quickly slow down construction activity, as well as production dependent on foreign sources for either new machinery or spare parts. Some raw material imports, such as pyrites for the chemical industry or gypsum for cement production, probably would be regarded as essential. Other items, such as paper or textiles, probably could be dispensed with for some months.

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20. In addition to these goods that can be identified, there is a substantial quantity of economic goods imported into North Vietnam in normal years which we cannot identify, although we do estimate the tonnages involved. [redacted] tons of seaborne direct way to judge [redacted]

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[redacted] We have arbitrarily assumed that 50% of them -- or [redacted] are essential, and have added this amount to our totals.

Military Goods

21. The military supply component of the 2,700-ton minimum daily import requirement amounts to about 510 tons, including 330 tons of petroleum and 180 tons of weapons, equipment, and ammunition. This tonnage would enable North Vietnam to prosecute the war in South Vietnam with periodic high levels of activity, and to meet the essential supply requirements of its forces in Cambodia and Laos.

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22. Among the most critical military imports is petroleum. Of the approximately 330 tons of petroleum required daily for military uses, the North Vietnamese inventory of tanks and military trucks probably would consume about 165 tons. Other consumers engaged in direct support of military operations, including railroads, coastal shipping, and river barges, would require the remainder.

23. Ammunition requirements to support a continuation of the present scale of fighting are estimated to be about 100 tons daily in all of Indochina. Of this amount, antiaircraft artillery, surface-to-air missiles, and other ammunition requirements for use inside North Vietnam total about 53 tons daily. (This estimate is based on rates of expenditure and analogies with experience elsewhere in Indochina.) Ammunition requirements in Laos, Cambodia, and South Vietnam should total about 47 tons daily (24 tons for South Vietnam, 18 tons for Laos, and 5 tons for Cambodia). These amounts allow for air defense expenditures as well as ammunition consumed in ground operations.

24. The remaining 80 tons of the 510-ton daily total would be weapons and equipment which the North Vietnamese need to operate in North Vietnam and on the battlefields of Indochina. Although this tonnage requirement varies in composition by region, it was derived using consumption factors which give a generally accurate aggregate figure for Indochina as a whole.

* * * * *

Prospects

25. After two months of heavy interdiction, transportation bottlenecks almost certainly have caused a dwindling of raw material stocks at manufacturing installations in North Vietnam. While no single sector of industry has yet been completely shut down, only about 25% of North Vietnam's electric power generating capacity remains operative. The cities of Hanoi and Haiphong must now rely on one vintage powerplant in generally poor operating condition and a number of small diesel generating plants. North Vietnam's only iron and steel combine has been hit, as have the country's largest textile and chemical plants, the only cement plant, and one of the two largest coal-grading plants. No attempt to repair damaged industrial facilities has yet been observed, and there appears to be a cutback in construction, at least in economic aid projects located where the risk of further bombing is high.

The current level of economic activity is probably 10% to 15% below the pre-bombing level.

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29. The strain imposed on the populace by the reduced level of imports, of course, will be only one of the added difficulties of the war which have increased war weariness in North Vietnam. Other important negative factors working on popular morale in the North are the heavy casualties and failure of the North Vietnamese army to achieve its objectives in the South. It is conceivable that a combination of these pressures, particularly if the course of the war in the South continues to go against the North Vietnamese, could result in the development of strong popular pressures on the North Vietnamese regime for a change in war policy, but there is as yet no firm evidence of such pressures building to a level of political consequence.

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